Dialysis: Reducing Infections and Changing Culture

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Priti Patel] Hello, I'm Priti Patel, a medical officer at the Centers for Disease Control and Prevention and Director of CDC's Making Dialysis Safer for Patients Coalition.

It's my pleasure to introduce Sally Hess. Sally has many years of experience as an infection preventionist and most recently was the manager of an infection prevention team at an academic medical center. She's been an integral part of our dialysis patient safety efforts since 2009. As part of the Making Dialysis Safer for Patients Coalition, I asked her to share a personal story involving her work to keep dialysis patients safe from healthcare infections.

[Sally Hess] Thanks, Priti. I'm excited to share my experience engaging physician leadership in dialysis centers and developing a culture of safety as an essential part of any infection prevention initiative.

My story starts outside the dialysis setting. As you mentioned, I was part of the infection prevention team at an academic medical center. In early 2008, the organization adopted a "Getting to Zero" initiative. Our earliest focus was the prevention of central line-associated bloodstream infections, also known as CLABSIs, in our ICUs.

By late 2008, the rates had started to drop. We had a great physician-led team that worked on implementing and improving the insertion and removal of central lines, and a team of nurses focused on improving the care and maintenance of the lines. As part of the improvement project, my team provided updates at weekly multidisciplinary teaching rounds. Each week's update included a graph showing the days since the last infection for several specific healthcare-associated infections, including CLABSIs.

An infection prevention team member always attended the weekly rounds and if there had been an infection, the case was presented and discussed. The focus of the discussion was on the risk for infection for that particular case and a review of opportunities for improvement. I remember one case where a physician involved in the patient's care spoke up and said, "Yup, that was probably my fault." She went on to describe the specific breach in aseptic technique that may have put the patient at increased risk. It was refreshing—that the culture allowed for open and transparent discussion without blame. This led to an honest discussion of the challenges and prompted many improvement opportunities.

It was interesting to me that the sincerity of the discussion and interest in improvement increased as the days since last infection increased. They really wanted to have zero infections. When an infection occurred after several months of zero infections there was always alarm, followed by renewed effort to understand what really happened at the bedside. The team discussion frequently included compliance with general practices. They looked at the unique risks of the case and always looked for opportunities for improvement. What's really cool is that the ICUs went on to have stretches of more than a year without a single CLABSI. What a success! We

had multiple elements adding up to a great culture that continued to support safety initiatives and interventions.

But back to the dialysis part of my story. I was the person responsible for surveillance of bloodstream infections throughout our healthcare system. Even with the drop in our ICU cases, there were still a lot of positive blood culture results being sent to me for review on a daily basis. Where were they coming from? Were they healthcare associated? My initial observation was that many were from outpatients. With further investigation, I discovered a common thread that many were from patients cared for at one of our six hospital-owned outpatient dialysis centers. In addition, some of the blood cultures were obtained in the Emergency Room or on admission to the hospital. I spoke with the hospital Epidemiologist about the trend and we decided it was worth a closer look.

For the remainder of the year, I saved all the positive reports from the locations of interest. I collected additional information for each case and entered the events into CDC's NHSN Dialysis Event Surveillance module.

At the end of the year, I did a deep dive analysis of the accumulated reports, and my suspicions were correct—the majority of cases were coming from outpatient dialysis. There were about 130 positive blood cultures in dialysis outpatients. At the time, the total census for the six dialysis centers was around 300 patients. It looked like just shy of half of our dialysis patients had a positive blood culture during the past year. I knew we could do better than that.

During the year, I had developed a working relationship with the Nurse Manager responsible for all six dialysis centers. She was also concerned about the frequent infections. She shared with me that when she mentioned her concerns to the physicians, she frequently got the feedback that infections were to be expected in this patient population. From their perspective, it didn't seem out of the ordinary.

In an attempt to shed some light on the problem, the Hospital Epidemiologist and I partnered with the Nurse Manager to present the surveillance data at a large, multidisciplinary team meeting that included all the facility's nephrologists, fellows, nurse leaders, and pharmacists. The data showed that the bloodstream infection rates were high for all six centers, compared to national rates.

After I presented the slides with our local data, the physicians quickly started to find reasons to discount its value. They thought there were too few centers in the national surveillance database to make a valid comparison, they didn't understand the NHSN metric of number of infections per 100 patient-months, and they claimed they had much sicker patients than other centers. One very vocal nephrologist felt the data didn't reflect a problem. I was feeling a bit overwhelmed by all this disbelief. Having worked with the ICU physicians, I realized that if they don't recognize that there's a problem, then nothing will happen to change the situation.

I stepped back from the escalating discussion about the validity of the national rates and our data, feeling a bit exasperated. Before the meeting was over though, I spoke up one more time and simply stated what was obvious to me, "There were about 130 infections in 300 patients during

the past year. This impacted almost *half* of your patients…and their loved ones. Many were hospitalized and some died. We can do better than that." We had run out of time, the meeting ended, and no further action was taken that day. I felt personally defeated.

The Nurse Manager, however, did not give up. She arranged for a smaller work group to look further into the problem. The group included several of the medical directors, nurse managers, assistant nurse managers, pharmacists, and the Hospital Epidemiologist. Most of the team had been at the large meeting. The first agenda item was the review of the data. Interestingly, the Hospital Epidemiologist took the lead this time around. He stated something like, "We can quibble about the nuances of the data, however, no matter how you look at it, having one-third to one-half of our patients getting infected is too many. We have to do something about this. It is not acceptable."

I don't know if it was the peer-to-peer approach, hearing it a second time around, or could it be that what they heard from me earlier had actually sunk in? No matter what the reason, we spent very little time on the data limitations. The group wanted to hear more about the surveillance criteria and rate definitions, but didn't try to discredit the data. They simply wanted to understand. We discussed the risks of infection for patients, their gut feeling as to what was happening, and the expected standards of practice, especially at the chairside. The Hospital Epidemiologist shared his thoughts, along with some comparisons with the work that had been successful in the ICUs. We both talked about the importance of engaging all team members who care for the patient in the outpatient setting. At the end of the meeting, there seemed to be a shared sense of urgency and the Nurse Manager felt empowered to actively pursue opportunities for reducing risks. We had the start of an action plan.

With the buy-in and support from the physician leaders, we started working directly with the nurses and patient care technicians in the centers. We made a lot of changes, including the implementation of many of CDC's core interventions. We also empowered a group of nurses and technicians to be our infection prevention advocates. They received enhanced infection prevention education and were encouraged to share their knowledge. They developed "infection prevention eyes," always on the lookout for challenges and improvement opportunities. Following these changes, infections dropped significantly and were sustained with less than 10 infections per year for multiple years.

[Priti Patel] Sally, I remember when you first shared this story with me. I was floored by the initial reaction you encountered from the physician leadership in your dialysis centers, and impressed by your perseverance. What would you say to a nurse or other motivated provider who might be in a similar situation, trying to convince others that there's a problem with infections that requires action?

[Sally Hess] Have a vision for where you want to be, such as "getting to zero." Use local data and recognize that there is *always* room for improvement. Most of all, remember that you can't do this on your own. For improvements to be sustained, everyone needs to be on the same page, with a common mission and goal. Also, having a way to measure and compare your progress is essential.

[Priti Patel] How important do you think the culture of the unit is to this process?

[Sally Hess] The culture of the unit can make a big difference. Staff don't want to be blamed for an infection, especially when their potential role in a patient infection is not always obvious. That's why a culture that refrains from accusing behavior and supports positive feedback is so important. A culture of safety is important for everyone. Patients, staff, and leaders all need to be on board. Each team member must have knowledge, skills, motivation, and support to actively prevent infections 100 percent of the time.

[Priti Patel] Sally, thank you so much for sharing your story with us. CDC is working to help all dialysis centers use their data for improvement and to motivate all staff members in the facility to keep driving up the number of days since the last infection occurred, just as Sally did. To check out our dialysis safety resources and tools, go to cdc.gov/dialysis.

[Announcer] For the most accurate health information, visit cdc.gov or call 1-800-CDC-INFO.